

# Repair



# GMAX™ II 3900/5900/7900 TexSpray™ 5900HD/7900HD Airless Sprayers

Korean patent: 10-0647761

3A0243A  
ENG

**- For Portable Airless Spraying of Architectural Coatings and Paints -**

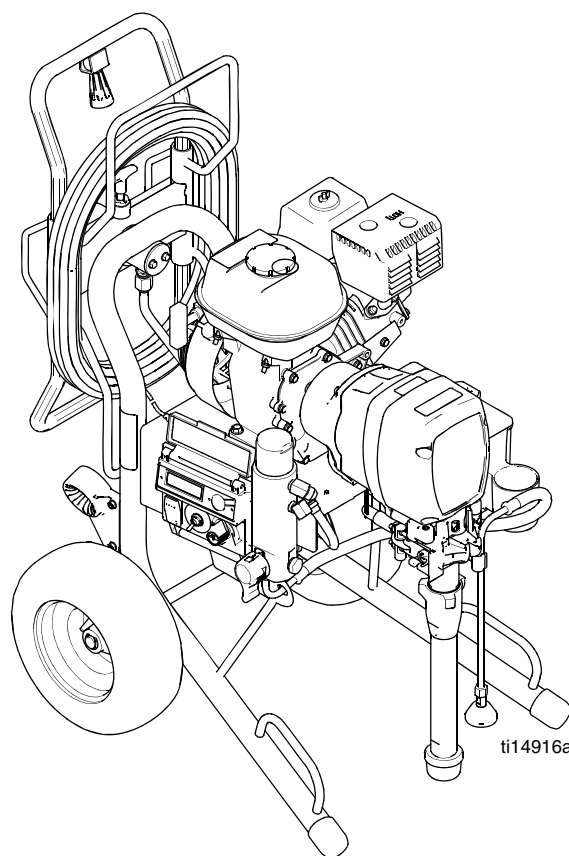
3300 psi (22.8 MPa, 228 bar) Maximum Working Pressure



## IMPORTANT SAFETY INSTRUCTIONS

Read all warnings and instructions in this manual. Save these instructions.

GMAX 3900				
Model	Hi-Boy Premium (QuikReel)	Hi-Boy Standard	Lo-Boy Premium (QuikReel)	Lo-Boy Standard
248683				✓
248684		✓		
249335		✓		
258731	✓			
258736			✓	
GMAX 5900				
Model	Hi-Boy Premium (QuikReel)	Hi-Boy Standard	Lo-Boy Premium (QuikReel)	Lo-Boy Standard
248687				✓
248688		✓		
258732	✓			
258737			✓	
TexSpray 5900 HD				
Model	Hi-Boy Premium (QuikReel)	Hi-Boy Standard	Lo-Boy Premium (QuikReel)	Lo-Boy Standard
258734	✓			
GMAX 7900				
Model	Hi-Boy Premium (QuikReel)	Hi-Boy Standard	Lo-Boy Premium (QuikReel)	Lo-Boy Standard
248700				✓
248701		✓		
258733	✓			
258738			✓	
GMAX 7900				
Model	Hi-Boy Premium (QuikReel)	Hi-Boy Standard	Lo-Boy Premium (QuikReel)	Lo-Boy Standard
258735	✓			



ti14916a

## Related Manuals:

Operation	3A0242
Parts	3A0244
Gun	311861














HO03

PROVEN QUALITY. LEADING TECHNOLOGY.

## Warning

The following are general warnings related to the setup, use, maintenance and repair of this equipment. Additional, more specific, warnings may be found throughout the text of this manual, where applicable.

 <b>WARNING</b>	
	<p><b>FIRE AND EXPLOSION HAZARD</b></p> <p>Flammable fumes, such as solvent and paint fumes, in <b>work area</b> can ignite or explode. To help prevent fire and explosion:</p> <ul style="list-style-type: none"> <li>• Use equipment only in well ventilated area.</li> <li>• Do not fill fuel tank while engine is running or hot; shut off engine and let it cool. Fuel is flammable and can ignite or explode if spilled on hot surface.</li> <li>• Eliminate all ignition sources; such as pilot lights, cigarettes, portable electric lamps, and plastic drop cloths (potential static arc).</li> <li>• Keep work area free of debris, including solvent, rags and gasoline.</li> <li>• Do not plug or unplug power cords, or turn power or light switches on or off when flammable fumes are present.</li> <li>• Ground all equipment in the work area. See <b>Grounding</b> instructions.</li> <li>• Use only grounded hoses.</li> <li>• Hold gun firmly to side of grounded pail when triggering into pail.</li> <li>• If there is static sparking or you feel a shock, <b>stop operation immediately</b>. Do not use equipment until you identify and correct the problem.</li> <li>• Keep a working fire extinguisher in the work area.</li> </ul>
	<p><b>SKIN INJECTION HAZARD</b></p> <p>High-pressure fluid from gun, hose leaks, or ruptured components will pierce skin. This may look like just a cut, but it is a serious injury that can result in amputation. <b>Get immediate surgical treatment.</b></p> <ul style="list-style-type: none"> <li>• Do not spray without tip guard and trigger guard installed.</li> <li>• Engage trigger lock when not spraying.</li> <li>• Do not point gun at anyone or at any part of the body.</li> <li>• Do not put your hand over the spray tip.</li> <li>• Do not stop or deflect leaks with your hand, body, glove, or rag.</li> <li>• Follow the <b>Pressure Relief Procedure</b> when you stop spraying and before cleaning, checking, or servicing equipment.</li> <li>• Tighten all fluid connections before operating the equipment.</li> <li>• Check hoses and couplings daily. Replace worn or damaged parts immediately.</li> </ul>
	<p><b>MOVING PARTS HAZARD</b></p> <p>Moving parts can pinch, cut or amputate fingers and other body parts.</p> <ul style="list-style-type: none"> <li>• Keep clear of moving parts.</li> <li>• Do not operate equipment with protective guards or covers removed.</li> <li>• Pressurized equipment can start without warning. Before checking, moving, or servicing equipment, follow the <b>Pressure Relief Procedure</b> and disconnect all power sources.</li> </ul>

 <b>WARNING</b>	
	<p><b>PRESSURIZED ALUMINUM PARTS HAZARD</b></p> <p>Use of fluids that are incompatible with aluminum in pressurized equipment can cause serious chemical reaction and equipment rupture. Failure to follow this warning can result in death, serious injury, or property damage.</p> <ul style="list-style-type: none"> <li>Do not use 1,1,1-trichloroethane, methylene chloride, other halogenated hydrocarbon solvents or fluids containing such solvents.</li> <li>Many other fluids may contain chemicals that can react with aluminum. Contact your material supplier for compatibility.</li> </ul>
	<p><b>SUCTION HAZARD</b></p> <p>Powerful suction could cause serious injury.</p> <ul style="list-style-type: none"> <li>Never place hands near the pump fluid inlet when pump is operating or pressurized.</li> </ul>
	<p><b>CARBON MONOXIDE HAZARD</b></p> <p>Exhaust contains poisonous carbon monoxide, which is colorless and odorless. Breathing carbon monoxide can cause death.</p> <ul style="list-style-type: none"> <li>Do not operate in an enclosed area.</li> </ul>
	<p><b>TOXIC FLUID OR FUMES HAZARD</b></p> <p>Toxic fluids or fumes can cause serious injury or death if splashed in the eyes or on skin, inhaled, or swallowed.</p> <ul style="list-style-type: none"> <li>Read MSDS's to know the specific hazards of the fluids you are using.</li> <li>Store hazardous fluid in approved containers, and dispose of it according to applicable guidelines.</li> </ul>
	<p><b>BURN HAZARD</b></p> <p>Equipment surfaces and fluid that's heated can become very hot during operation. To avoid severe burns:</p> <ul style="list-style-type: none"> <li>Do not touch hot fluid or equipment.</li> </ul>
	<p><b>PERSONAL PROTECTIVE EQUIPMENT</b></p> <p>You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect you from serious injury, including eye injury, hearing loss, inhalation of toxic fumes, and burns. This equipment includes but is not limited to:</p> <ul style="list-style-type: none"> <li>Protective eyewear, and hearing protection.</li> <li>Respirators, protective clothing, and gloves as recommended by the fluid and solvent manufacturer.</li> </ul>

# Maintenance

## Pressure Relief Procedure



1. Lock gun trigger safety.
2. Turn engine ON/OFF switch to OFF.
3. Move pump switch to OFF and turn pressure control knob fully counterclockwise.
4. Unlock trigger safety. Hold metal part of gun firmly to side of grounded metal pail, and trigger gun to relieve pressure.
5. Lock gun trigger safety.
6. Open pressure drain valve. Leave valve open until ready to spray again.

*If you suspect that the spray tip or hose is completely clogged, or that pressure has not been fully relieved after following the steps above, VERY SLOWLY loosen tip guard retaining nut or hose end coupling to relieve pressure gradually, then loosen completely. Now clear tip or hose.*

**NOTE:** For detailed engine maintenance and specifications, refer to separate Honda Engines Owner's Manual, supplied.

**DAILY:** Check engine oil level and fill as necessary.

**DAILY:** Check hose for wear and damage.

**DAILY:** Check that all hose fittings are secure.

**DAILY:** Check gun safety for proper operation.

**DAILY:** Check pressure drain valve for proper operation.

**DAILY:** Check and fill the gas tank.

**DAILY:** Check level of TSL in displacement pump packing nut. Fill nut, if necessary. Keep TSL in nut to help prevent fluid buildup on piston rod and premature wear of packings and pump corrosion.

### AFTER THE FIRST 20 HOURS OF OPERATION:

Drain engine oil and refill with clean oil. Reference Honda Engines Owner's Manual for correct oil viscosity.

**WEEKLY:** Remove engine air filter cover and clean element. Replace element, if necessary. If operating in an unusually dusty environment: check filter daily and replace, if necessary.

Replacement elements can be purchased from your local HONDA dealer.

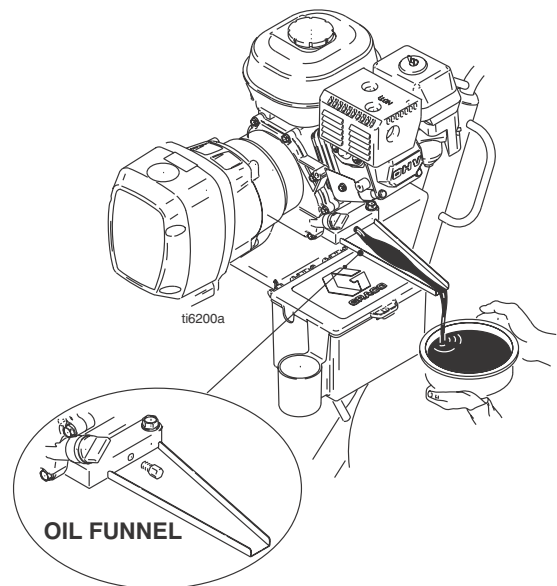
### AFTER EACH 100 HOURS OF OPERATION:

Change engine oil. Reference Honda Engines Owner's Manual for correct oil viscosity.

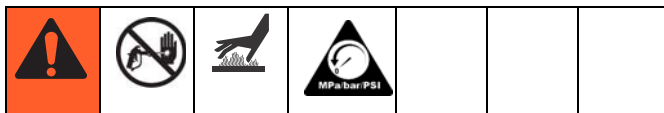
**SPARK PLUG:** Use only BPR6ES (NGK) or W20EPR-U (NIPPONDENSO) plug. Gap plug to 0.028 to 0.031 in. (0.7 to 0.8 mm). Use spark plug wrench when installing and removing plug.

### Premium Sprayers Engine Oil Funnel:

Use the supplied engine oil funnel when draining oil.



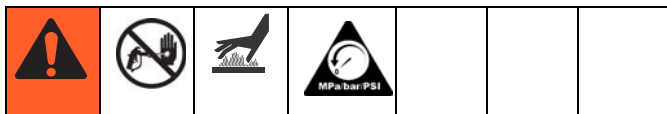
# Troubleshooting



Problem	Cause	Solution
<b>E=XX</b> is displayed	Fault condition exists.	Determine fault correction from table, page 14.
Engine will not start	Engine switch is OFF.	Turn engine switch ON.
	Engine is out of gasoline.	Refill gas tank. Honda Engine Manual.
	Engine oil level is low.	Try to start engine. Replenish oil, if necessary. Honda Engine Manual.
	Spark plug disconnected or damaged.	Connect spark plug cable or replace spark plug.
	Engine is cold.	Use choke.
	Fuel shutoff lever is OFF.	Move lever to ON position.
	Oil is seeping into combustion chamber.	Remove spark plug. Pull starter 3 to 4 times. Clean or replace spark plug. Start engine. Keep sprayer upright to avoid oil seepage.
False tripping of WatchDog system. <b>EMPTY</b> is displayed. Pump does not run.	Operating conditions out of WatchDog parameters.	Turn pressure down. Contact Graco Technical Assistance to adjust WatchDog parameters. Operate without WatchDog active (see Operation manual).
	Pump output is low, page 6.	
Engine operates, but displacement pump does not operate	Error code displayed.	Reference Pressure Control repair, page 21.
	Pump switch is OFF.	Turn pump switch ON.
	Pressure setting too low.	Turn pressure adjusting knob clockwise to increase pressure.
	Fluid filter is dirty.	Clean filter.
	Tip or tip filter is clogged.	Clean tip or tip filter (see gun manual).
	Displacement pump piston rod is stuck due to dried paint.	Repair pump (see pump manual).
	Connecting rod is worn or damaged.	Replace connecting rod. Page 15.
	Drive housing is worn or damaged.	Replace drive housing. Page 16.
	Electrical power is not energizing clutch field.	Check wiring connections. Page 21.  Reference <b>Digital Display Messages</b> . Page 14.  Reference wiring diagram. Page 21.  With pump switch ON and pressure turned to <b>MAXIMUM</b> , use a test light to check for power between clutch test points on control board.  Remove clutch wires from control board and measure resistance across clutch coil. At 70° F, the resistance must be between 1.2 + 0.2 Ω; if not, replace pinion housing.  Have pressure control checked by authorized Graco dealer.
	Clutch is worn, damaged, or incorrectly positioned.	Adjust or replace clutch. Page 19.
	Pinion assembly is worn or damaged.	Repair or replace pinion assembly. Page 17.

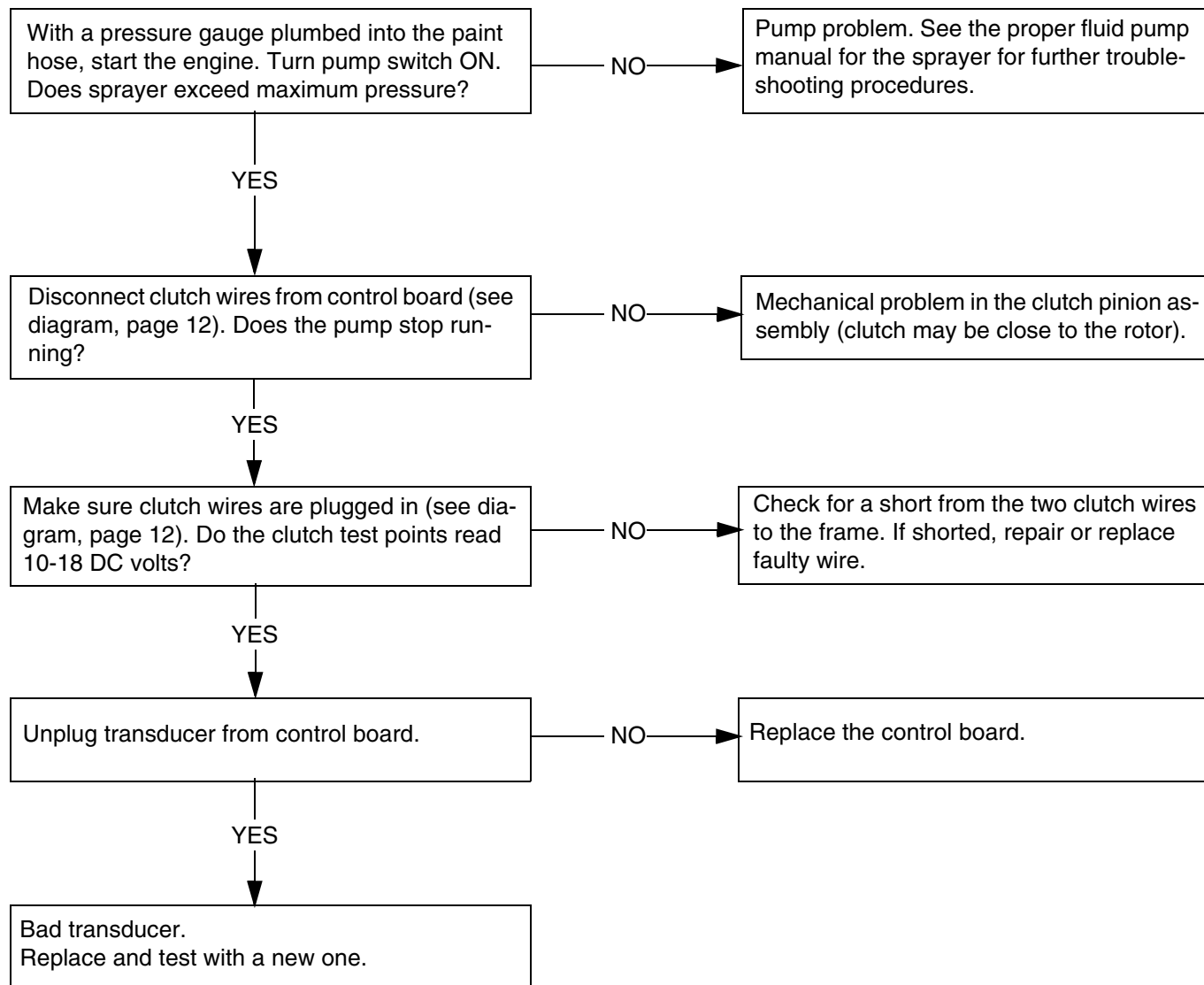
Problem	Cause	Solution
Pump output is low	Strainer is clogged.	Clean strainer.
	Piston ball is not seating.	Service piston ball (see pump manual).
	Piston packings are worn or damaged.	Replace packings (see pump manual).
	O-ring in pump is worn or damaged.	Replace o-ring (see pump manual).
	Intake valve ball is not seating properly.	Clean intake valve (see pump manual).
	Intake valve ball is packed with material.	Clean intake valve (see pump manual).
	Engine speed is too low.	Increase throttle setting (see operation manual).
	Clutch is worn or damaged.	Adjust or replace clutch. Page 17.
	Pressure setting is too low.	Increase pressure (see operation manual).
	Fluid filter, tip filter or tip is clogged or dirty.	Clean filter (see gun manual).
	Large pressure drop in hose with heavy materials.	Use larger diameter hose and/or reduce overall length of hose. Use of more than 100 ft of 1/4 in. hose significantly reduces performance of sprayer. Use 3/8 in. hose for optimum performance (50 ft minimum).
Excessive paint leakage into throat packing nut	Throat packing nut is loose.	Remove throat packing nut spacer. Tighten throat packing nut just enough to stop leakage.
	Throat packings are worn or damaged.	Replace packings (see pump manual).
	Displacement rod is worn or damaged.	Replace rod (see pump manual).
Fluid is spitting from gun	Air in pump or hose.	Check and tighten all fluid connections. Rep- rime pump (see operation manual).
	Tip is partially clogged.	Clear tip (see gun manual).
	Fluid supply is low or empty.	Refill fluid supply. Prime pump (see operation manual). Check fluid supply often to prevent running pump dry.
Pump is difficult to prime	Air in pump or hose.	Check and tighten all fluid connections.  Reduce engine speed and cycle pump as slowly as possible during priming.
	Intake valve is leaking.	Clean intake valve. Be sure ball seat is not nicked or worn and that ball seats well. Reas- semble valve.
	Pump packings are worn.	Replace pump packings (see pump manual).
	Paint is too thick.	Thin the paint according to the supplier's rec- ommendations.
	Engine speed is too high.	Decrease throttle setting before priming pump (see operation manual).
Clutch squeaks each time clutch engages	Clutch surfaces are not matched to each other when new and may cause noise.	Clutch surfaces need to wear into each other. Noise will dissipate after a day of run time.
High engine speed at no load	Misadjusted throttle setting.	Reset throttle to 3300 engine rpm at no load.
	Worn engine governor.	Replace or service engine governor.
Gallon counter not working	Bad sensor, broken or disconnected wire. Displaced or missing magnet.	Check connections. Replace sensor or wire. Reposition or replace magnet.
No display, sprayer operates	Display damaged or has bad connec- tion.	Check connections. Replace display.

# Fluid Pump Runs Constantly



1. Perform **Pressure Relief Procedure** (page 4), turn prime valve forward to SPRAY position, and turn power switch OFF.
2. Remove control box cover.

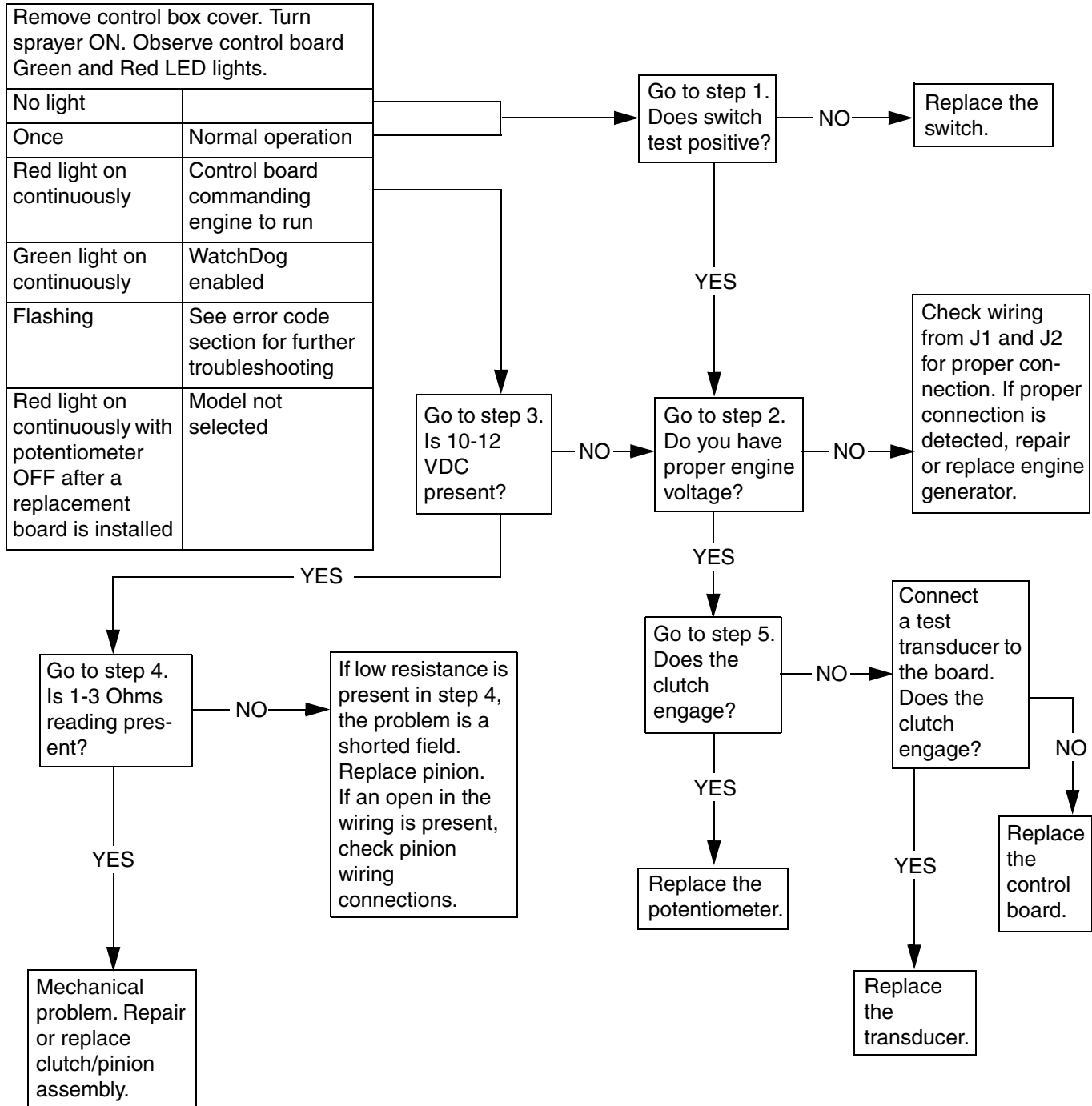
## Troubleshooting Procedure:



# Control Board Malfunction

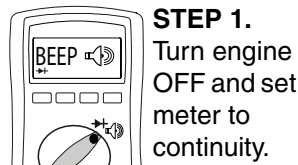
## Troubleshooting Procedure

(see following page for actual steps):



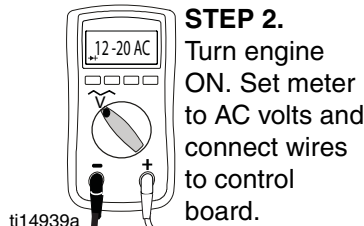
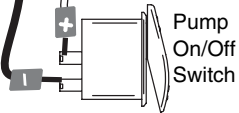


# Control Board Malfunction (Steps)



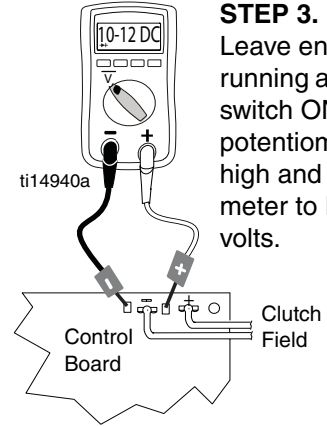
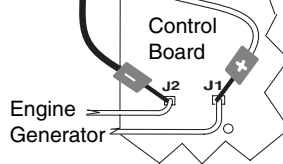
**STEP 1.**  
Turn engine  
OFF and set  
meter to  
continuity.

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**STEP 2.**  
Turn engine  
ON. Set meter  
to AC volts and  
connect wires  
to control  
board.

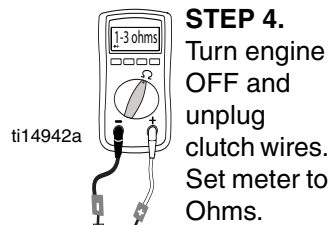
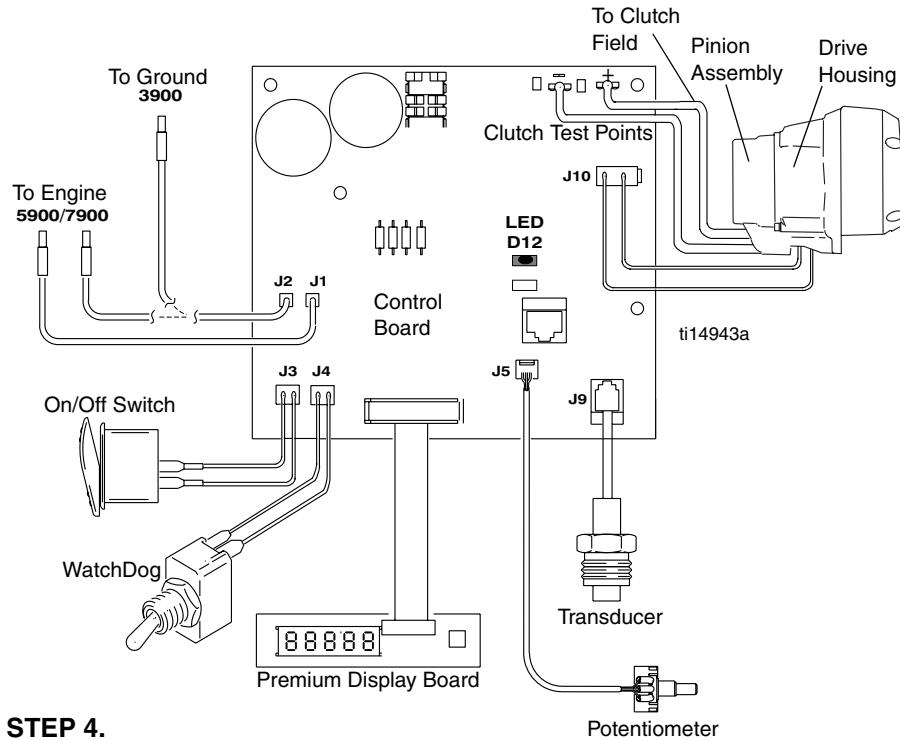
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**STEP 3.**  
Leave engine  
running and turn  
switch ON. Turn  
potentiometer to  
high and set  
meter to DC  
volts.

ti14940a

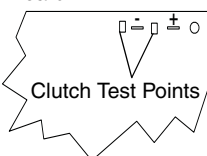
Control Board  
Clutch Field



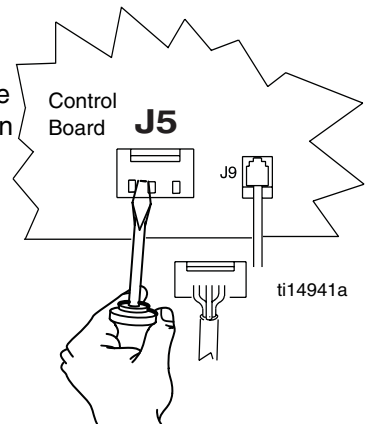
**STEP 4.**  
Turn engine  
OFF and  
unplug  
clutch wires.  
Set meter to  
Ohms.

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Control Board  
Clutch Field



**STEP 5.**  
Turn engine  
ON and turn  
switch ON.

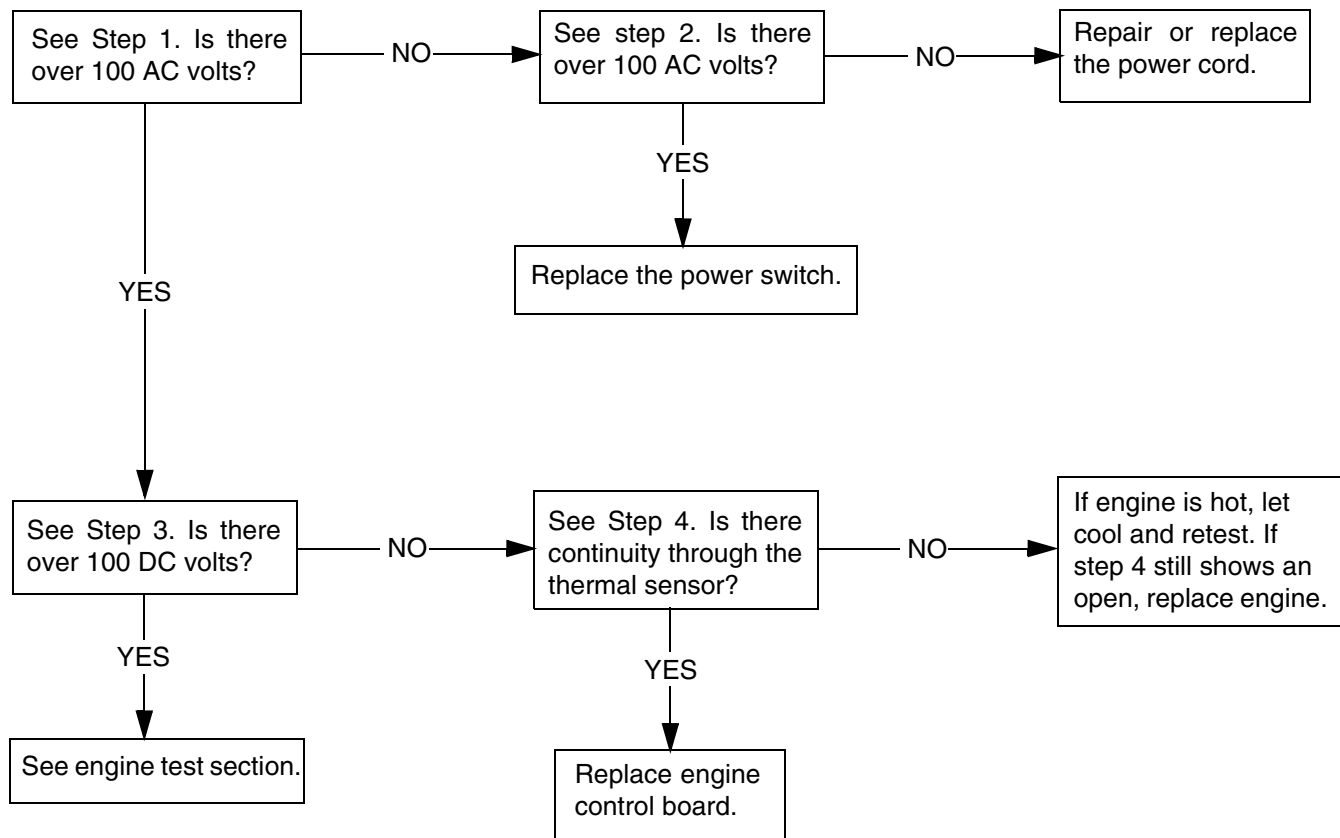


Control Board  
J5

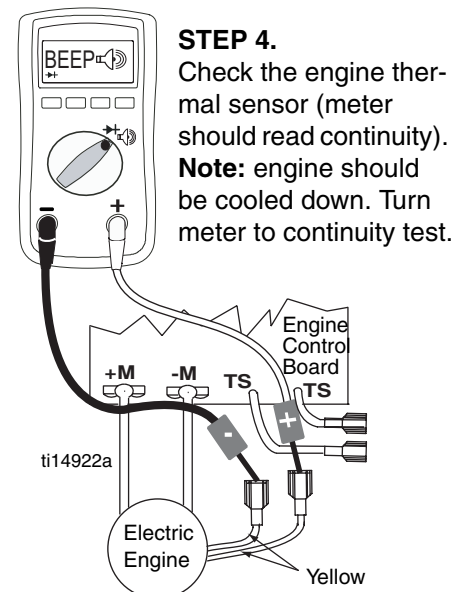
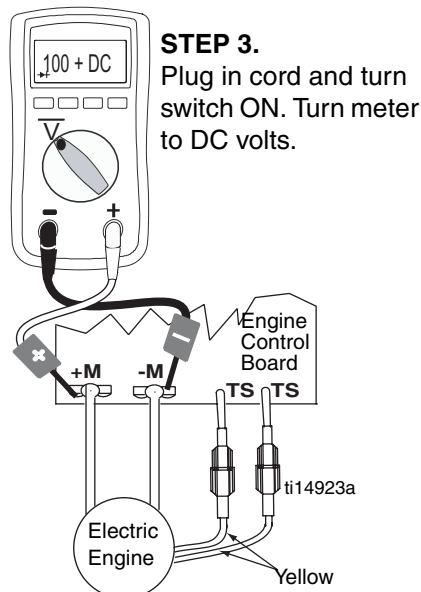
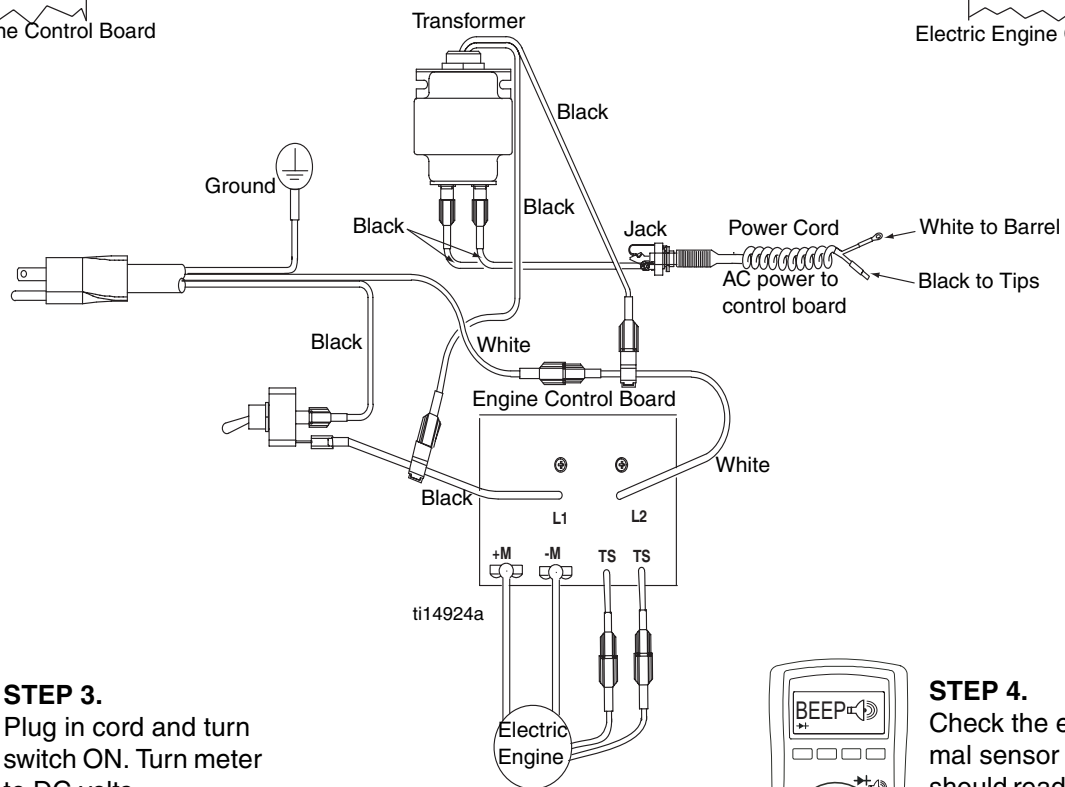
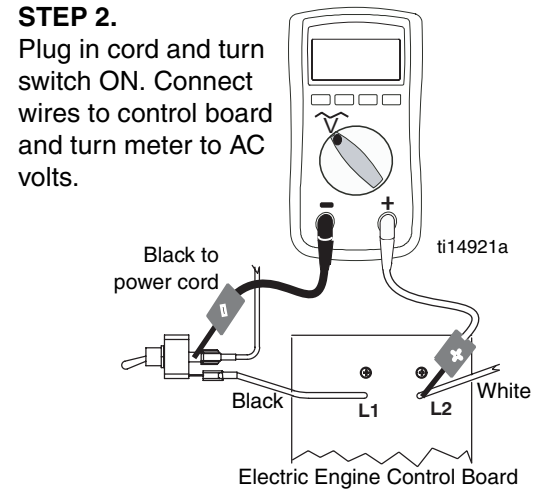
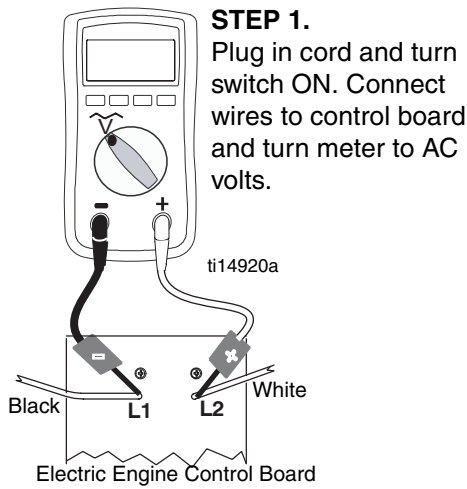
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## Convertible Electric Motor Will Not Run

**Troubleshooting Procedure**  
(see following page for actual steps):



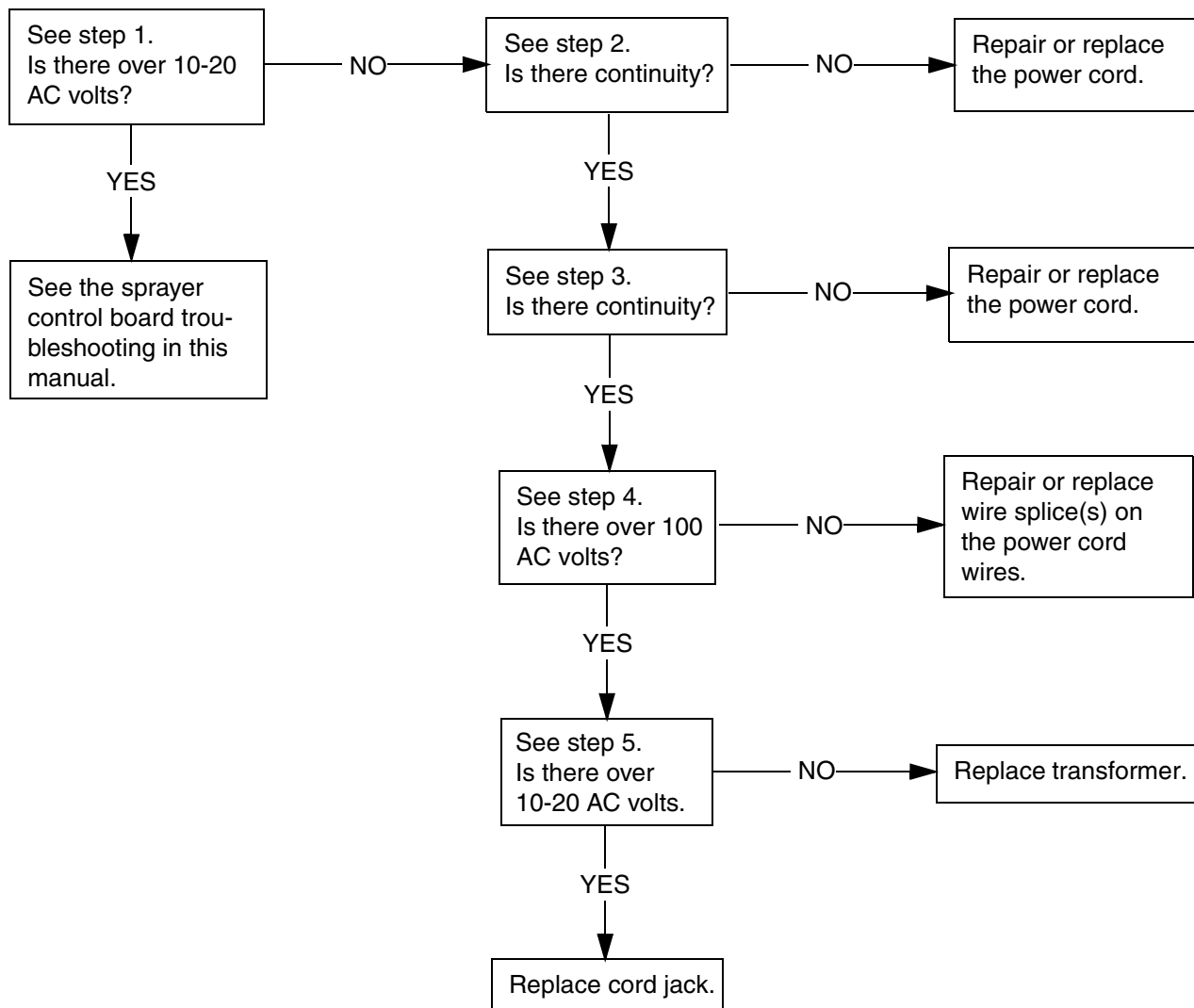
# Convertible Electric Motor Will Not Run (Steps)



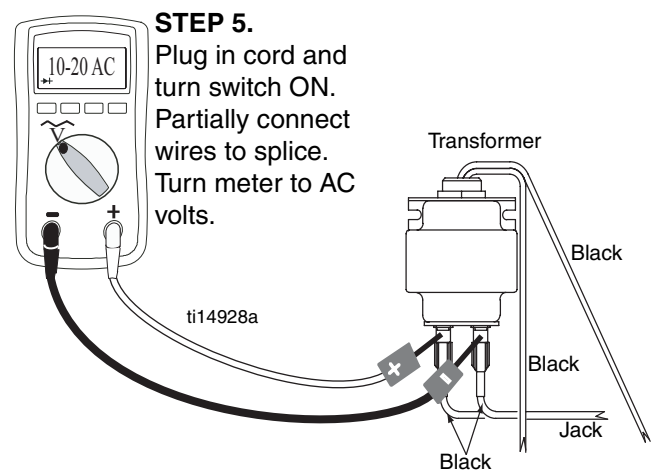
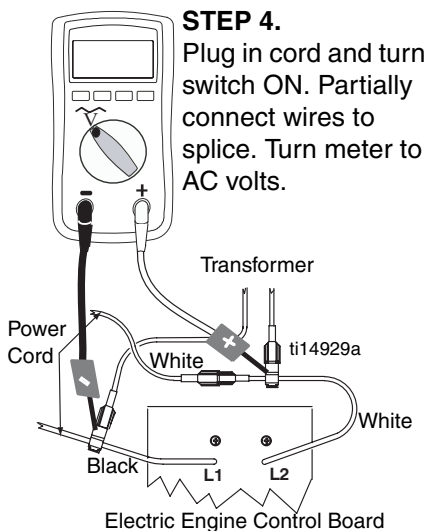
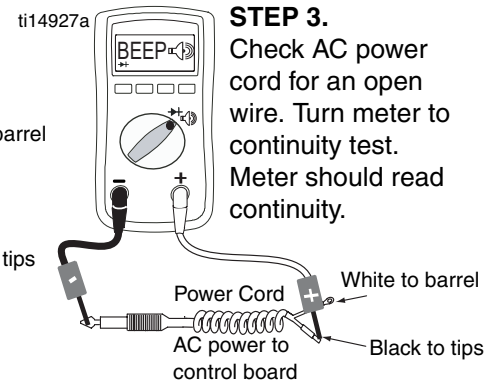
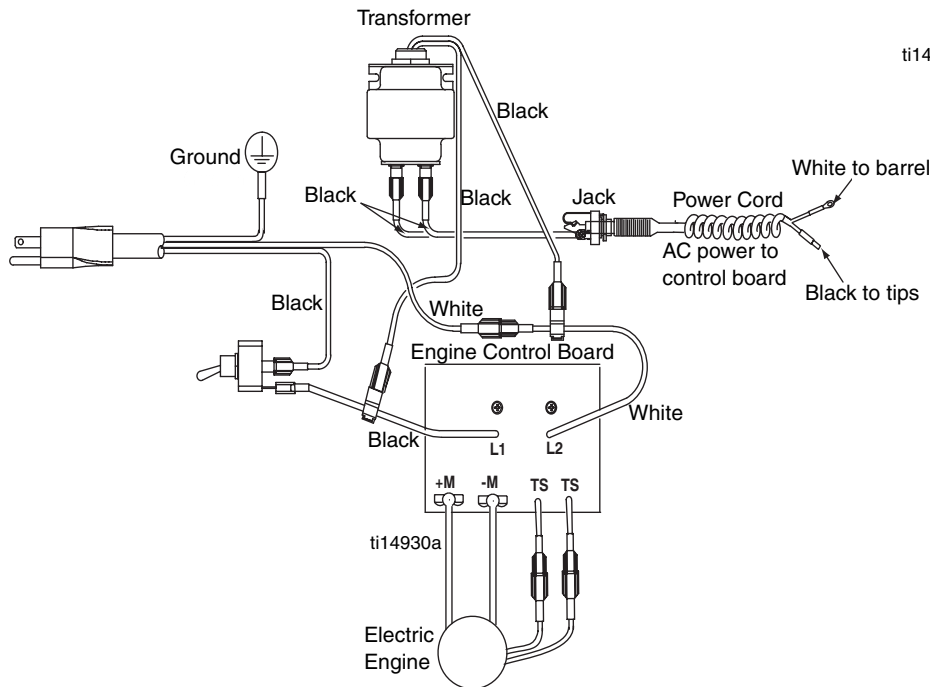
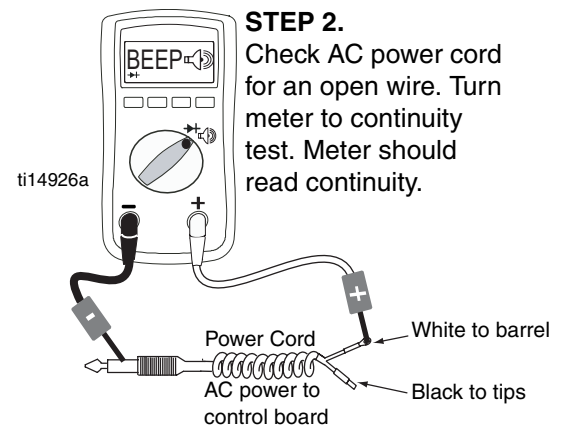
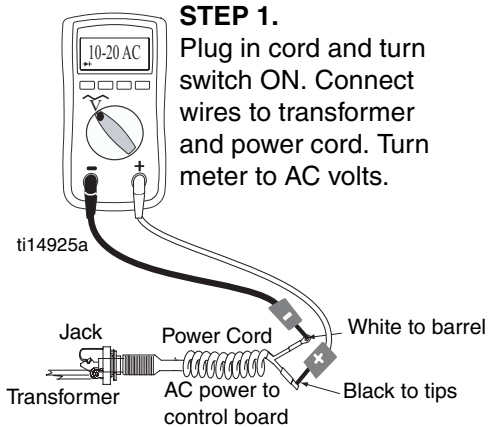
## Convertible Electric Motor Runs - No AC Output to Sprayer Control Board

### Troubleshooting Procedure

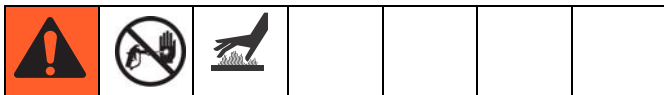
(see following page for actual steps):









# Convertible Electric Motor Runs - No AC Output to Sprayer Control Board (Steps)



# Digital Display Messages



- Digital messages are not available on all sprayers
- Blinking LED total count equals digital error code i.e., two blinks is the same as E=02

DISPLAY*	SPRAYER OPERATION	INDICATION	ACTION
No Display	Sprayer may be pressurized.	Loss of power or display not connected.	Check power source. Relieve pressure before repair or disassembly. Verify display is connected.
 ti6314a	Sprayer may be pressurized.	Pressure less than 200 psi (14 bar, 1.4 MPa).	Increase pressure as needed.
 ti6315a	Sprayer is pressurized. Power is applied. (Pressure varies with tip size and pressure control setting).	Normal operation.	Spray
 ti6316a	Sprayer stops. Engine is running.	Exceeded pressure limit.	1. Check fluid path for clogs, such as clogged filter. 2. Open prime valve and gun if running AutoClean. 3. Use Graco paint hose, 1/4 in. x 50 ft minimum. Smaller hose or metal braid hose may result in pressure spikes. 4. Replace transducer if fluid path is not clogged and proper hose is used.
 ti6317a	Sprayer stops. Engine is running.	Pressure transducer faulty, bad connection or broken wire.	1. Check transducer connection. 2. Disconnect and reconnect transducer plug to ensure good connection with control board socket. 3. Open prime valve. Replace sprayer transducer with known good transducer and run sprayer. Replace transducer if sprayer runs or control board if sprayer does not run.
 ti6318a	Sprayer stops. Engine is running.	High clutch current.	1. Check wiring connections. 2. Measure: 1.2 + 0.2 $\Omega$ (GMAX II 3900); 1.7 + 0.2 $\Omega$ (GMAX II 5900/ 7900 & TexSpray 7900HD) across clutch field at 70°F. 3. Replace clutch field assembly.
EMPTY  (with constant green LED)	Sprayer stops. Engine is running.	Loss of paint to pump or severe pressure loss.	1. Check for empty paint condition, clogged inlet strainer, failed pump or severe leak. 2. Reduce pressure and turn pump switch OFF and ON to restart pump. 3. WatchDog function can be deactivated by turning WatchDog switch OFF.
 ti6320a	Sprayer stops. Engine is running.	Pressure greater than 2000 psi (138 bar, 14 MPa) while in Flush Timer Mode.	1. Open prime valve and gun. 2. Verify no flow obstructions or clogged filter.

\* Error codes also appear on control board as a blinking red LED. LED is an alternate to digital messages.

- Remove two screws (71) and swing down cover (130).
- Start engine. Blink count is the same as error code (E=0X).

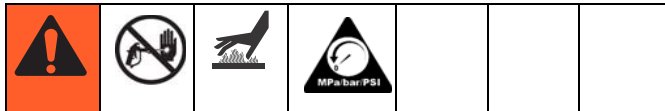
After a fault, follow these steps to restart sprayer:

- Correct fault condition
- Turn sprayer OFF
- Turn sprayer ON

# Bearing Housing and Connecting Rod

**NOTE:** The item numbers referenced are for the 5900 Hi-Boy models. The 3900, 7900 and all Lo-Boy models may have different item numbers. Use the 5900 Hi-Boy item number and part to find the corresponding alternate part and item number.

## Removal



1. **Relieve pressure;** page 4.
2. Remove four screws (45) and front cover (44)
3. Remove pump. Refer to **Displacement Pump, Removal**, page 23.
4. Remove four screws (41) and washers (42) from bearing housing (40).
5. Pull connecting rod (43) and lightly tap lower rear of bearing housing with plastic mallet to loosen from drive housing (33). Pull bearing housing and connecting rod assembly off drive housing.
6. Inspect crank (B) and connecting rod (43) for excessive wear and replace parts as needed.

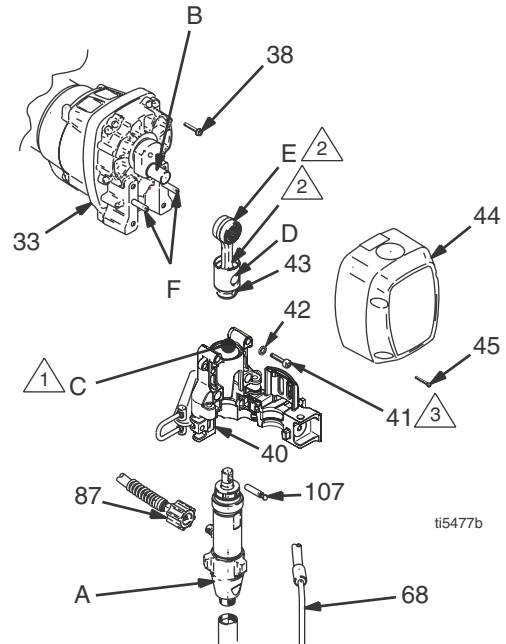
## Installation

1. Evenly lubricate inside of bronze bearing (C) in bearing housing (40) with high-quality motor oil. Liberally pack top roller bearing (E), lower bearing (D) inside connecting rod (43) with bearing grease.
2. Assemble connecting rod (43) to bearing housing (40). Rotate connecting rod to lowest position.
3. Clean mating surfaces of bearing and drive housings.
4. Align connecting rod with crank (B) and carefully align locating pins (F) in drive housing (33) with holes in bearing housing (40). Push bearing housing onto drive housing or tap into place with plastic mallet.

### NOTICE

DO NOT use bearing housing screws (41) to align or seat bearing housing with drive housing. Align these parts with locating pins, to avoid premature bearing wear.

5. Install screws (41) and washers (42) in bearing housing. Torque evenly to note 3 value below.
6. Install pump. Refer to **Displacement Pump, Installation**, page 14.



△ Oil

△ Pack with bearing grease 114819

△ GMAX II 3900: Torque to 200 in-lb (22.6 N•m)  
 GMAX II 5900: Torque to 25 ft-lb (34 N•m)  
 GMAX II 7900: Torque to 40 ft-lb (54 N•m)  
 TexSpray 5900HD: Torque to 40 ft-lb (54 N•m)  
 TexSpray 7900HD: Torque to 40 ft-lb (54 N•m)

# Drive Housing

## Removal



1. Relieve pressure; page 4.
2. Remove bearing housing. Refer to **Bearing Housing and Connecting Rod, Removal**, page 15.

### NOTICE

Premium models: Gallon counter sensor is connected to control board in pressure control. Pulling on the sensor wires could cause damage.

3. Premium sprayers: Remove two screws (108) and gallon counter sensor (39).

### NOTICE

Thrust washers may stick to grease inside of drive housing. Do not lose or misplace.

4. Remove six screws (38).
5. Lightly tap around drive housing (33) to loosen drive housing. Pull drive housing straight off pinion housing. Be prepared to support combination gear (32) which may also come out.

## Installation

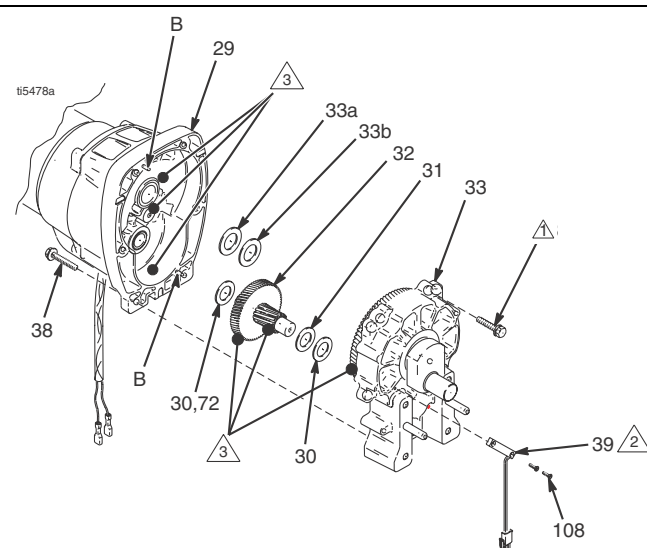
1. Apply all grease supplied with replacement gear cluster to gear teeth and to areas called out by note 3.
2. Ensure thrust washers (30, 31; 5900/7900) (30, 31, 72; 3900) are on combination gear (32) and washers (33a, 33b) are on crankshaft of drive housing (33) as shown.
3. Clean mating surfaces of pinion and drive housings.
4. Align gears and push new drive housing straight onto pinion housing (29) and locating pins (B).
5. Install six screws (38).
6. Install gallon counter sensor (39) with two screws (108).

7. Install bearing housing. Refer to **Bearing Housing and Connecting Rod, Installation**, page 15.

### NOTICE

DO NOT use drive housing screws (38) to align or seat drive housing with pinion housing. Align these parts with locating pins, to avoid premature bearing wear.

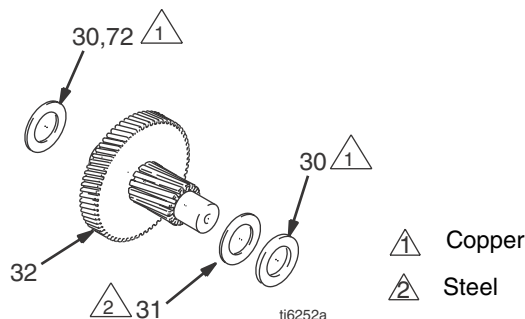
8. Install screws (38) in drive housing. Torque evenly to note 3 value below.
9. Install pump. Refer to **Displacement Pump, Installation**, page 14.



- ⚠ GMAX II 3900: Torque to 140 ±10 in-lb (15.8 ±1.1 N•m)
- ⚠ GMAX II 5900: Torque to 200 ±10 in-lb (22.6 ±1.1 N•m)
- ⚠ GMAX II 7900: Torque to 200 ±10 in-lb (22.6 ±1.1 N•m)
- ⚠ Texspray 5900HD: Torque to 200 ±10 in-lb (22.6 ±1.1 N•m)
- ⚠ Texspray 7900HD: Torque to 200 ±10 in-lb (22.6 ±1.1 N•m)

⚠ Gallon counter sensor

⚠ Pack with grease 114819





# Pinion Assembly/Clutch Armature/Clamp

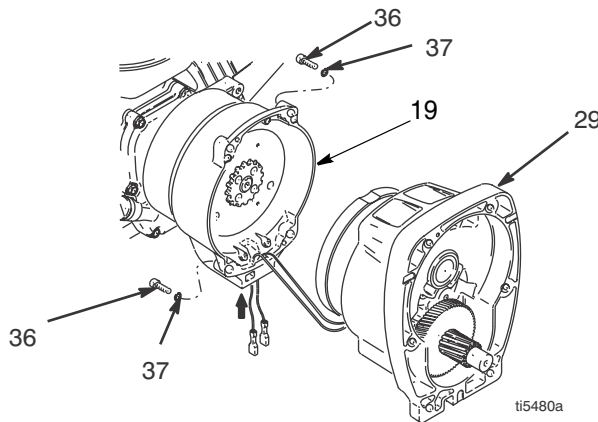
## Pinion Assembly/Clutch Armature Removal

### Pinion Assembly

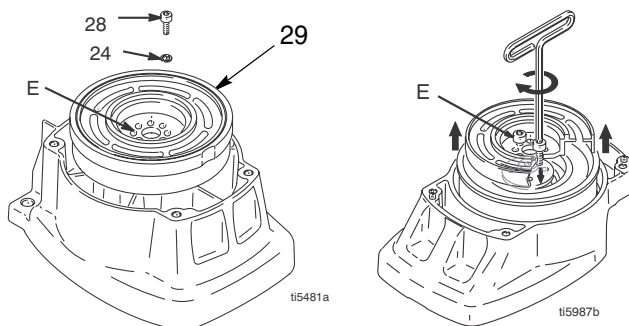
If pinion assembly (29) is not removed from clutch housing (19), do 1. through 3. Otherwise, start at 4.



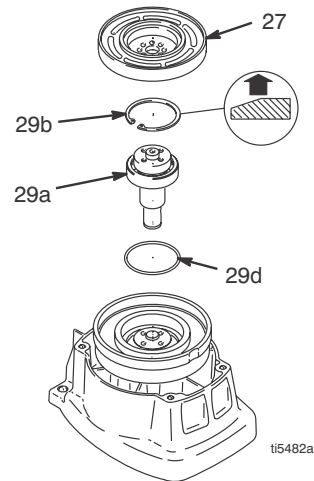
1. Remove drive housing; page 16.
2. Disconnect clutch cable connectors from inside of pressure control.
  - a. Remove two screws (71) and swing down cover (130a).
  - b. Disconnect engine leads from board to engine.
  - c. Remove strain reliefs 130r and 123.
3. Remove four screws (36) and pinion assembly (29).



4. Place pinion assembly (29) on bench with rotor side up.
5. Remove four screws (28) and lock washers (24). Install two screws in threaded holes (E) in rotor. Alternately tighten screws until rotor comes off.

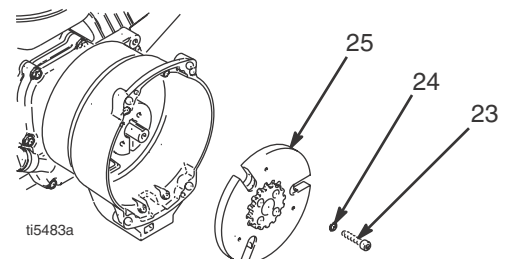


6. Remove retaining ring (29b).
7. Turn pinion assembly over and tap pinion shaft (29a) out with plastic mallet.



### Clutch Armature

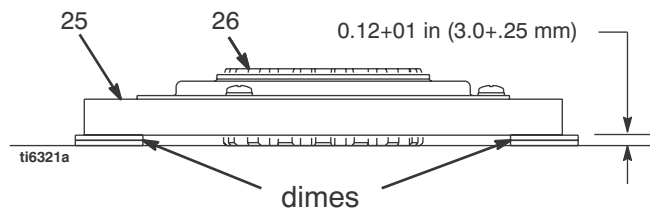
8. Use an impact wrench or wedge something between clutch armature (25) and clutch housing to hold engine shaft during removal.
9. Remove four screws (23) and lock washers (24).
10. Remove armature.



## Installation

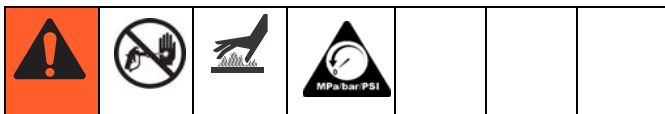
### Clutch Armature

1. Lay two stacks of two dimes on smooth bench surface.
2. Lay armature (25) on two stacks of dimes.
3. Press center of hub (26) down to bench surface.

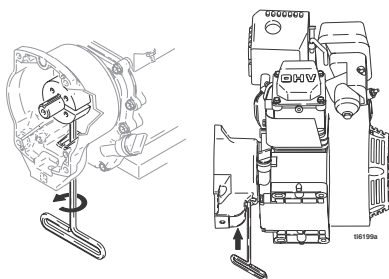


4. Install armature (25) on engine drive shaft.
5. Install four screws (23) and lock washers (24) with torque of 125 in-lb.

### Clamp Removal



1. Remove engine.
2. Drain gasoline from tank according to Honda manual.
3. Tip engine on side so gas tank is down and air cleaner is up.
4. Loosen two screws (24) on clamp (22),
5. Push screwdriver into slot in clamp (22) and remove clamp.



### Clamp Installation

1. Install engine shaft key (18).
2. Tap clamp (22) onto engine shaft (A). Maintain dimension shown note 2. Chamfer must face engine.

### Pinion Assembly

1. Check o-ring (29d) and replace if missing or damaged.
2. Tap pinion shaft (29a) in with plastic mallet.
3. Install retaining ring (29b) with beveled side facing up.
4. Place pinion assembly on bench with rotor side up.
5. Apply thread sealant to screws. Install four screws (28) and lock washers (24). Alternately torque screws to 125 in-lb until rotor is secure. Use threaded holes to hold rotor.
6. Install pinion assembly (29) with four screws (36) and washers (37).
7. Connect clutch cable connectors to inside of pressure control.

3. Check dimension: Place rigid, straight steel bar (B) across face of clutch housing (19). Use accurate measuring device to measure distance between bar and face of clamp. Adjust clamp as necessary. Torque two screws (24) to  $125 \pm 10$  in-lb ( $14 \pm 1.1$  N·m).

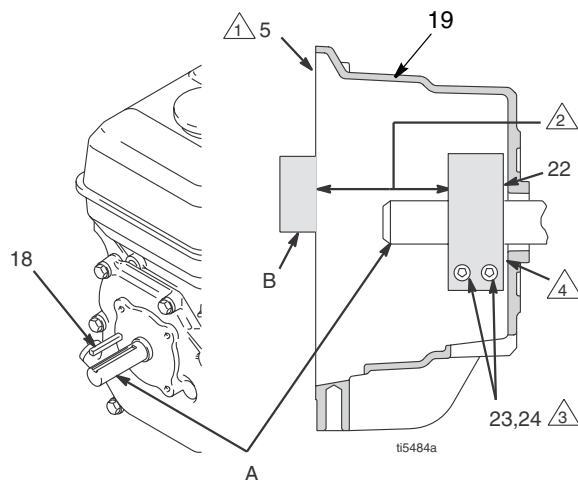
① Face of clutch housing

②  $1.550 \pm .010$  in. ( $39.37 \pm .25$  mm) - GMAX 3900

②  $2.612 \pm .010$  in. ( $66.34 \pm .25$  mm) - GMAX 5900 & 7900

③ Torque to  $125 \pm 10$  in-lb ( $14 \pm 1.1$  N·m)

④ Chamfer this side



# Clutch Housing

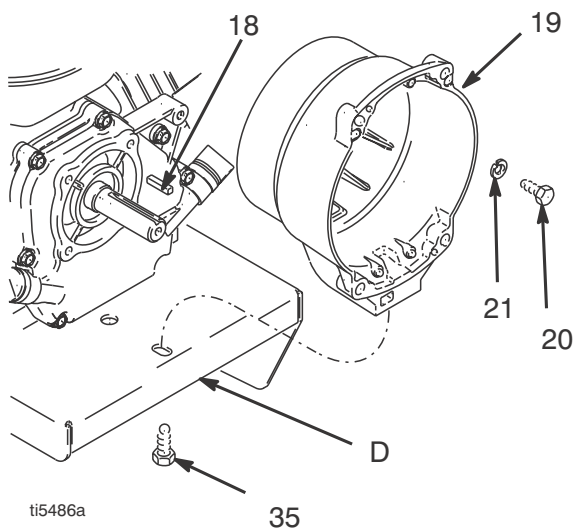
## Removal



1. Remove four screws (20) and lock washers (21) which hold clutch housing (19) to engine.
2. Remove screw (35) from under mounting plate (D).
3. Pull off clutch housing (19).

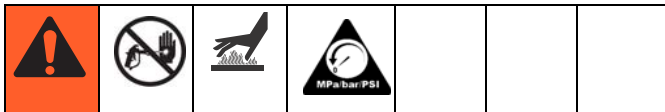
## Installation

1. Push on clutch housing (19).
2. Install four capscrews (20) and lock washers (21) and secure clutch housing (19) to engine. Torque to 200 in-lb (22.6 N·m).
3. Install screw (35) from beneath mounting plate (D). Torque to 26 ft-lb (35.2 N·m).



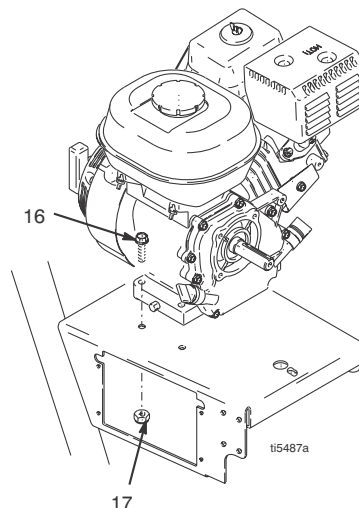
# Engine

## Removal



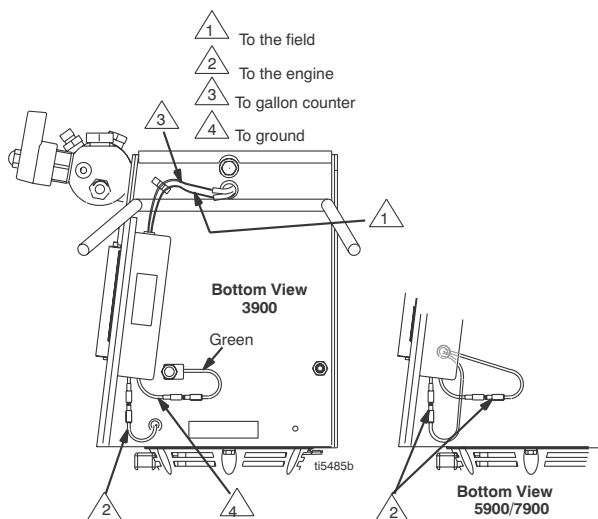
**NOTE:** All service to the engine must be performed by an authorized Honda dealer.

1. Remove **Pinion Assembly/Clutch Armature/Clamp** and **Clutch Housing**, as instructed on pages 17, and 18.
2. Disconnect all necessary wiring.
3. Remove two locknuts (17) and screws (16) from base of engine.
4. Lift engine carefully and place on work bench.



## Installation

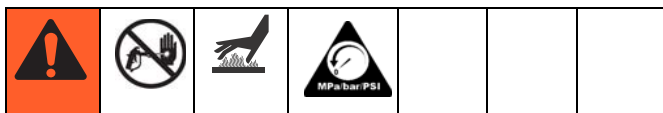
1. Lift engine carefully and place on cart.
2. Install two screws (16) in base of engine and secure with lock nuts (17). Torque to 26 ft-lb (22.6 N·m).
3. Connect all necessary wiring.
4. Install **Pinion Assembly/Clutch Armature/Clamp** and **Clutch Housing**, as instructed on pages 17, and 18.



# Pressure Control

## Pump ON/OFF Switch

### Removal

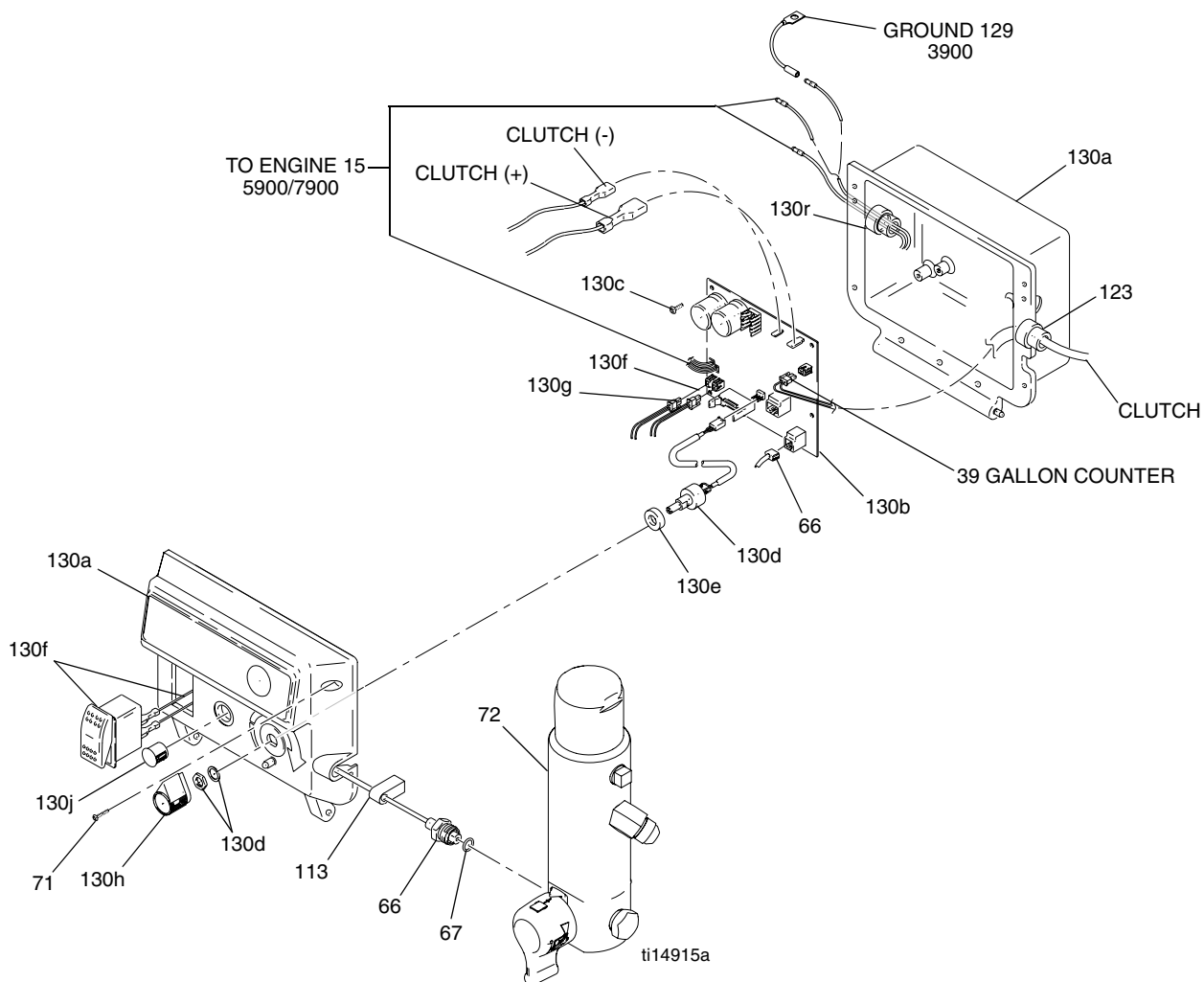


1. Remove two screws (71) and swing down cover (130a).
2. Disconnect pump ON/OFF switch (130f) connector from control board.

3. Press in on two retaining tabs on each side of pump ON/OFF switch (130f) and remove switch from cover.

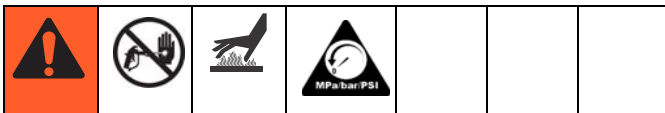
### Installation

1. Install new pump ON/OFF switch (130f) so tabs of switch snap into place on inside of cover.
2. Connect pump ON/OFF switch connector to control board.
3. Swing up cover (130a) and secure with two screws (71).



## Control Board

### Removal



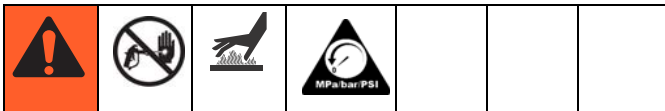
1. Remove two screws (71) and swing down cover (130a).
2. Remove strain relief bushings (130r and 123).
3. Disconnect at control board (130b):
  - Lead from potentiometer (130d)
  - Lead from transducer (66)
  - Lead from WatchDog switch (130g)
  - Lead from pump ON/OFF switch (130f)
  - Lead from gallon counter sensor (39)
  - Display connector (130m)
  - Engine, ground and clutch wires
4. Remove four screws (130c) and control board (130b).

### Installation

1. Install control board (130b) with four screws (130c).
2. Connect engine wires to control board (130b).
3. Connect at control board (130b):
  - Ground and clutch wires
  - Display connector (130m)
  - Lead from gallon counter sensor (39)
  - Lead from pump ON/OFF switch (130f)
  - Lead from WatchDog switch (130g)
  - Lead from transducer (66)
  - Lead from potentiometer (130d)
4. Install new strain relief bushings (123 and 130r).
5. Swing up cover (130a) and secure with two screws (71).

## Pressure Control Transducer

### Removal



1. Remove two screws (71) and swing down cover (130a).
2. Disconnect transducer (66) lead from control board (130b).
3. Pull transducer connector through rubber grommet (113).

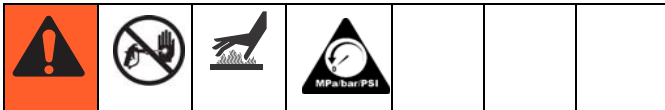
4. Remove pressure control transducer (66) and o-ring (67) from filter housing (72).

### Installation

1. Install o-ring (67) and pressure control transducer (66) in filter housing (72). Torque to 35 - 45 ft-lb.
2. Install transducer connector and rubber grommet in control housing.
3. Connect transducer (66) lead to control board (130b).
4. Swing up cover (130a) and secure with two screws (71).

## Pressure Adjust Potentiometer

### Removal



1. Remove two screws (71) and swing down cover (130a).
2. Disconnect potentiometer (130d) lead from control board (130b).
3. Loosen set screws on potentiometer knob (130h) and remove knob, shaft nut, lock washer and potentiometer (130d).
4. Remove shaft spacer (130e) from potentiometer.

### Installation

1. Install shaft spacer (130e) on potentiometer (130d).
2. Install potentiometer, shaft nut, lock washer and potentiometer knob (130h).
  - a. Turn potentiometer shaft clockwise to internal stop. Assemble potentiometer knob (130h) to strike pin on cover (130a).
  - b. After adjustment of step a., tighten both set screws in knob 1/4 to 3/8 turn after contact with shaft.
3. Connect potentiometer lead to control board (130b).
4. Swing up cover (130a) and secure with two screws (71).

After a fault, follow these steps to restart sprayer:

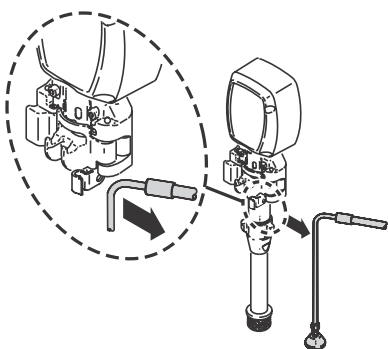
1. Correct fault condition.
2. Turn sprayer OFF.
3. Turn sprayer ON.

# Displacement Pump

## Removal

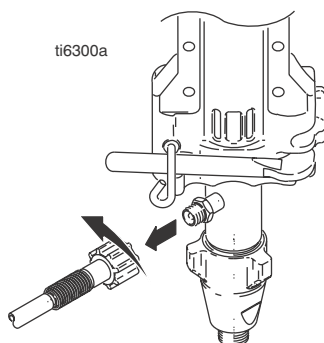


1. Flush pump.
2. Stop pump with piston rod in its lowest position.
3. Do **Pressure Relief**, page 4.
4. Separate drain hose from sprayer.



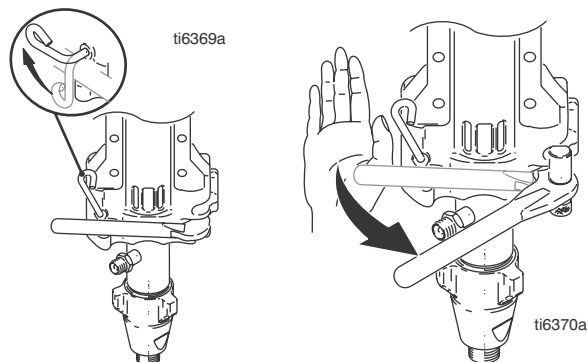
ti14904a

5. Disconnect material hose from pump.



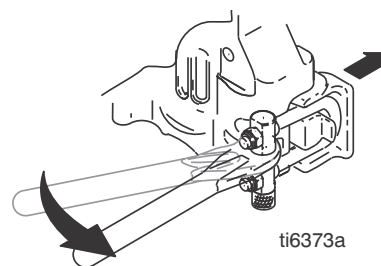
ti6300a

6. Raise latch lock. Push latch open.



7. Ratchet open pump door.

- a. Ratchet pump door forward.

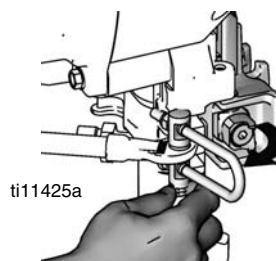


ti6373a

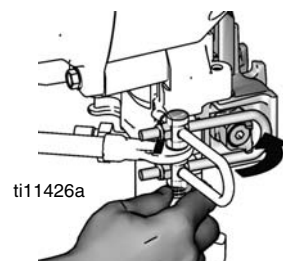
- b. Twist latch u-bolt out of pump door recess.

- c. Place u-bolt on pump door outer edge.

- d. If pump door is stuck, do steps e., f. and 8., otherwise go to step 9.

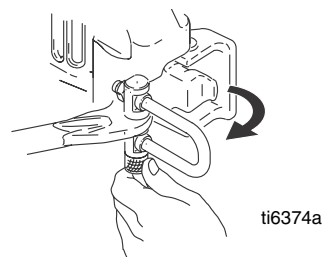


ti11425a



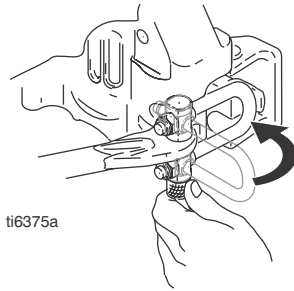
ti11426a

- e. Twist latch u-bolt back from pump door outer edge

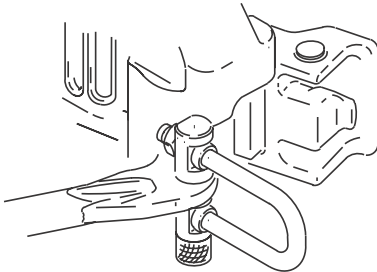


ti6374a

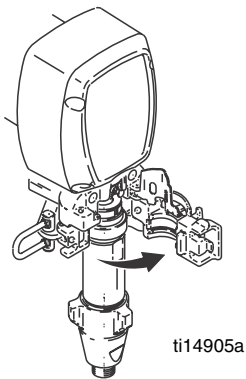
- f. Place u-bolt on pump door protrusion



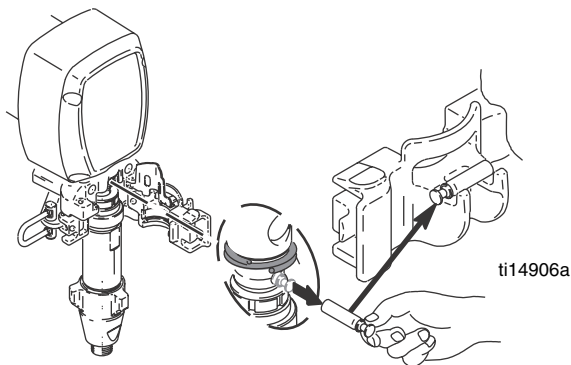
8. Ratchet pump door forward.



9. Open pump door.

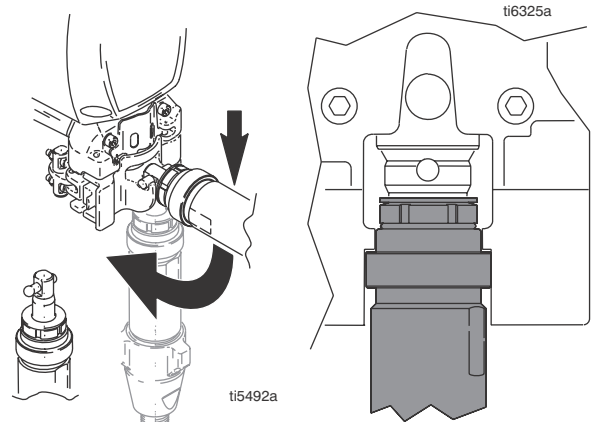


10. Pull out pump pin and place in pin holder

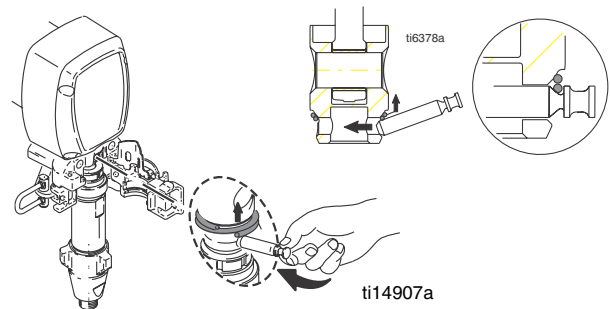


## Installation

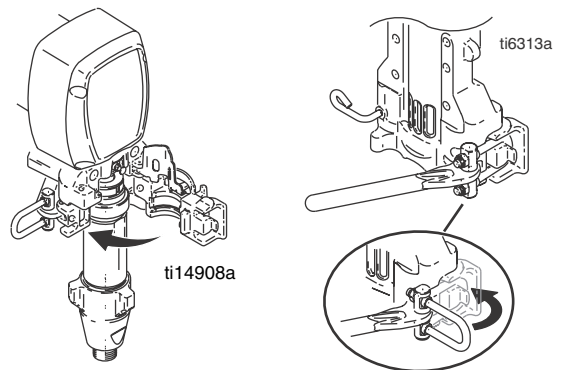
1. Adjust piston rod with pin holder to pull out piston rod. Tap piston rod on hard surface to push in piston rod.
2. Push pump collar flush with bearing housing ledge to be able to close pump door.



3. Slide pump into connecting rod. Push pump pin until it is fully retained.  
**NOTE:** Pin will snap into position.

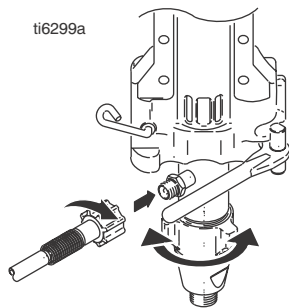


4. Close pump door and rotate latch into position. Do not tighten latch.

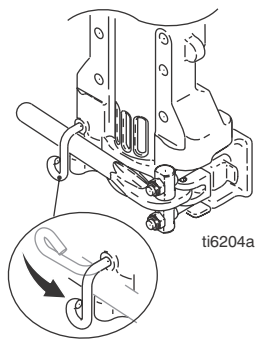
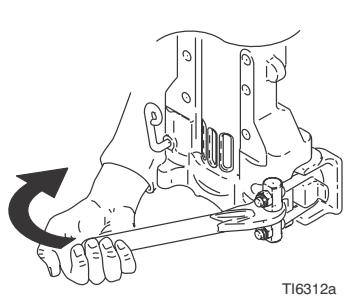




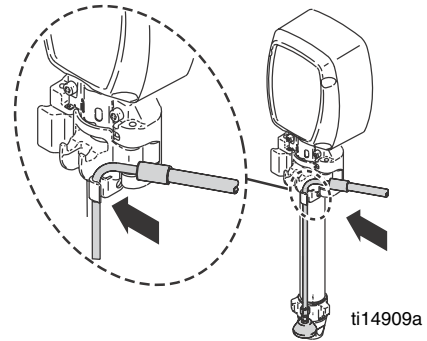
5. Rotate pump to align with material hose. Connect material hose and hand tighten to 70 in-lb.



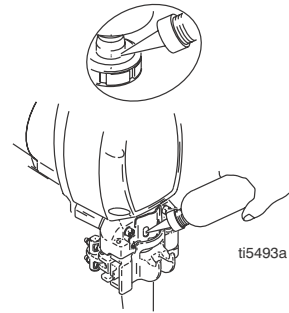
6. Tighten latch and rotate latch lock into locked position.



7. Attach drain hose to sprayer.





8. Fill pump with Graco TSL until fluid flows onto top of seal.

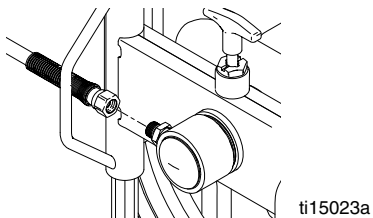


# Hose Reel

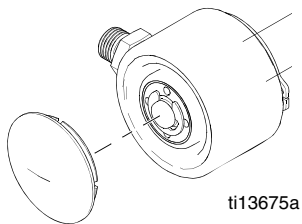
## Removal

						
Be sure to keep your head clear of hose reel while winding up hose.						

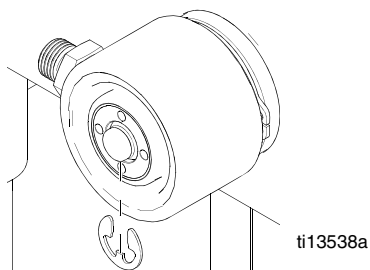
1. Remove hose fitting from swivel cap and completely remove hose.



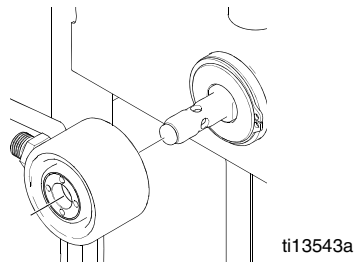
2. Remove cap from swivel.



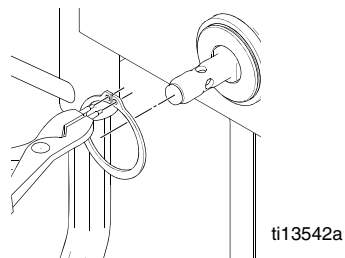
3. Remove E-clip from swivel shaft.



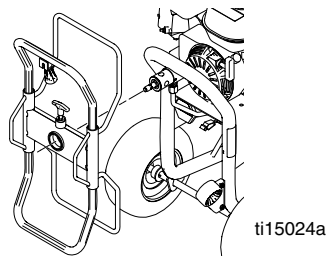
4. Remove swivel cap.



5. Remove snap ring.

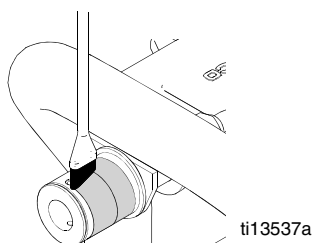


6. Remove hose reel.

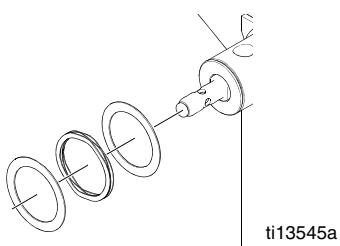


## Installation

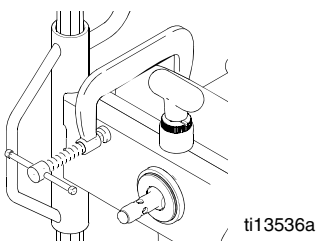
1. Grease shaft.



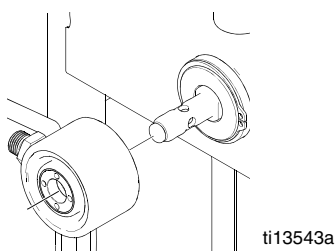
2. Make sure two washers and wave spring are on hub before hose reel is installed.



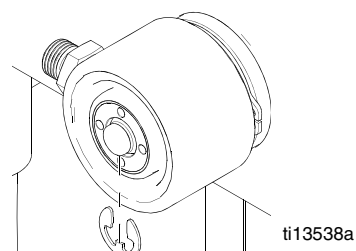
3. Install hose reel onto frame. Place C-clamp on reel and frame to allow snap ring to fit into place. Install snap ring.



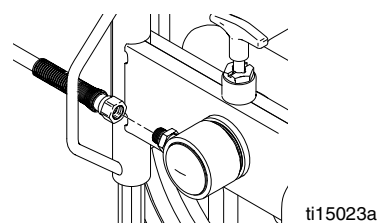
4. Install swivel cap.



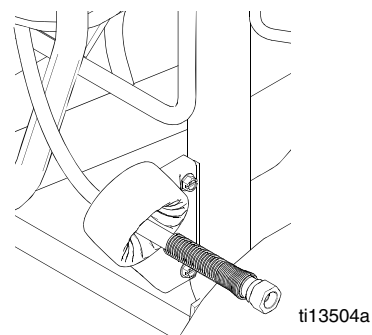
5. Install E-clip.



6. Install hose to hose cap. Make sure to route hose through side arm of hose reel.



7. Wrap up hose. Make sure hose is routed through hose guide.

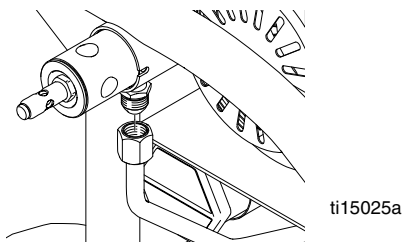


# Pivot Replacement

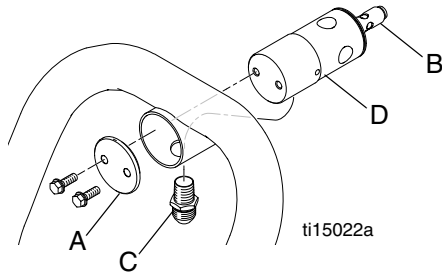
## Removal



1. Remove **Hose Reel**, page 26.
2. Remove rigid fluid tube from swivel shaft.



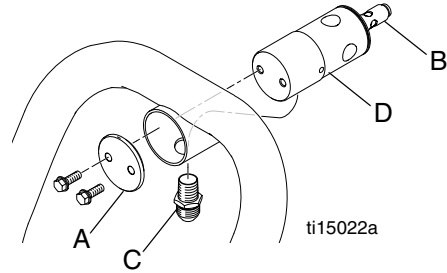
3. Remove two screws on pivot plate (A), swivel shaft (B) if necessary, and remove coupling (C) from swivel shaft.



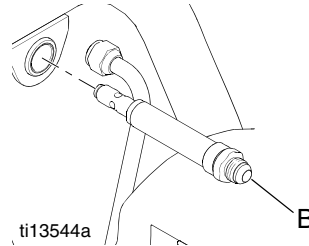
4. Remove pivot (D).

## Installation

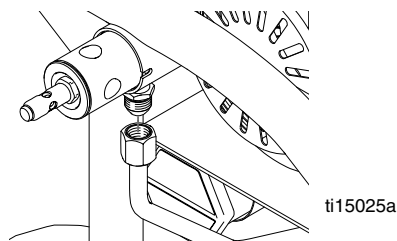
1. Install pivot (D).
2. Install pivot plate (A) on pivot and tighten two screws on pivot plate.



3. Install o-ring and replace swivel shaft (B) if it was removed.



4. Replace coupling (C).
5. Replace rigid fluid tube to swivel shaft if it was removed.



6. Replace **Hose Reel**, page 27.

# Technical Data

Honda GX120 Engine	
ANSI Power Rating @ 3600 rpm	4.0 Horsepower (3.0 kW)
Honda GX160 Engine	
ANSI Power Rating @ 3600 rpm	5.5 Horsepower (4.1 kW)
Honda GX 200 Engine	
ANSI Power Rating @ 3600 rpm	6.5 Horsepower (4.8 kW)
Maximum working pressure	
	3300 psi (228 bar, 22.8 MPa)
Noise Level	
Sound power	105 dBa per ISO 3744
Sound pressure	96 dBa measured at 3.1 feet (1 m)
Maximum delivery rating	
3900	1.25 gpm (4.73 liter/min)
5900/5900HD	1.60 gpm (6.06 liter/min)
7900	2.20 gpm (8.33 liter/min)
Maximum tip size	
3900	1 gun with 0.036 in. tip 2 guns with 0.023 in. tip 3 guns with 0.018 in. tip
5900/5900HD	1 gun with 0.043 in. tip 2 guns with 0.029 in. tip 3 guns with 0.023 in. tip 4 guns with 0.019 in. tip
7900	1 gun with 0.048 in. tip 2 guns with 0.035 in. tip 3 guns with 0.027 in. tip 4 guns with 0.023 in. tip
Inlet paint strainer	12 mesh (893 micron) stainless steel screen, reusable
Outlet paint filter	60 mesh (250 micron) stainless steel screen, reusable
Pump inlet size	1-5/16–12 UN-2A
Fluid outlet size: 3900/5900	¼ npsm from fluid filter
Fluid outlet size: 7900	3/8 npsm from fluid filter
Wetted parts	zinc-plated carbon steel, PTFE, nylon, polyurethane, UHMW polyethylene, fluoroelastomer, acetal, leather, aluminum, tungsten carbide, nickel- and zinc-plated carbon steel, stainless steel, chrome plating

## Dimensions

Sprayer (no hose and gun)	Weight lb (kg)	Height in. (cm)	Width in. (cm)	Length in. (cm)
3900	109 (50)	31.5 (80.0)	22.25 (56.5)	32.0 (81.3)
5900	139 (64)	32.25 (81.9)	24.5 (62.2)	32.25 (81.9)
7900	146 (67)	32.25 (81.9)	24.5 (62.2)	33.0 (83.8)
TexSpray 7900HD	157 (71)	32.25 (81.9)	24.5 (62.2)	33.0 (83.8)

## Notes

This image shows a full page of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for handwriting practice or general writing. There are no margins, text, or other markings on the page.

# Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

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